

SOUTH INDIAN WOODPECKERS.

BY

F. N. BETTS.

The heavily wooded slopes of the Nilgiris and other ranges of the Western Ghats provide an ideal habitat for the Woodpeckers, a family which is richly represented in Southern India. Even the most casual observer cannot help being struck by their abundance and variety, for their brilliant plumage and loud voices make them among the most conspicuous of the avifauna of the hill jungles.

The woodpeckers furnish an interesting study in evolution and an excellent example of how under favourable conditions, a particular form of life will tend to develop on widely divergent lines. The most striking instance of this phenomenon is the unique fauna of Australia, where the primitive marsupial mammals which have been ousted by more efficient rivals throughout the rest of the world, have, through the isolating action of a sea barrier, been freed from competition and enabled to evolve types as different as the kangaroos and the marsupial wolf, the Tasmanian devil and the pouched mole. In a similar way on a small scale, the Woodpeckers, having tapped a source of food supply unavailable to other birds, have thrown up a great variety of species all more or less highly specialised for their line of life. In their case, however, the process is in a much earlier stage and there are living genera showing every grade from comparative primitiveness up to a very high degree of specialisation. So far progress has been all on one particular line but it seems as if the limit has been reached in that direction and that various species are now beginning to evolve along different paths.

The two greatest controlling factors in bird life are the food supply and the problem of safeguarding their young whilst they are in the helpless stage. The woodpeckers have solved both questions very successfully by developing themselves into living pick-axes. The ordinary insectivorous birds can only obtain their food on the leaves and outer surfaces of the boughs and trunks of trees and are quite unable to get at the rich stores of invertebrate life lurking under the bark or boring into the wood and the woodpeckers have a free field. Again in the matter of breeding sites, birds which nest in holes have many advantages and are far less exposed to the elements and their enemies than those which build open nests in trees or lay their eggs upon the ground. Many species of almost every order of the avian class have adopted the hole-breeding habit and probably more would have done so had it not been for the comparative scarcity of suitable natural hollows. One has only to think of the extraordinary sites often chosen by Tits to realise the straits to which some birds may be put. The Parrots, Nuthatches and others have got as far as enlarging or adapting ready-made holes but it is only the Woodpeckers and their cousins the Barbets who have solved the

problem and made themselves independent of nature by learning to tunnel in wood. There are of course many other birds which excavate holes in the ground but that is another story. As a matter of fact, the majority of the smaller and medium sized birds which nest in holes in trees are parasitic on the Woodpeckers in so far as the disused 'dug-outs' of the latter are eagerly adopted as breeding sites and the rightful owner may even be evicted whilst still in occupation in certain cases.

Though the family by specialising have been so successful in exploiting their particular environment, it must be remembered that this is a strictly limited one. The typical Woodpecker can only exist in well wooded regions and even in such a considerable area is necessary to support each bird. Thus we find a keen and ever increasing competition among the various members of the family forcing some species to diverge from the main type to begin to seek a livelihood along different lines. As the pressure in the more congenial environment increases they are forced to adapt themselves to less agreeable conditions until we find them colonising areas so apparently unsuitable as the Arizona desert or the treeless Pampas of South America.

The region covered in this paper is a particularly suitable one for the study of the evolution of the Woodpeckers. For among the twelve species that occur are types representative of every phase in the history of the family. Before going further it would be as well to give some account of them.

1. **The Little Sealy-bellied Green Woodpecker**, *Picus vittatus myrmecophaneus* (Stresemann) appears to be an uncommon species. Davison says a few pairs are resident in the sholas round Ootacamund and the only two I have seen were on the borders of copses on the downs of the Nilgiri plateau. It seems to feed mainly on ground dwelling ants like its English congener *Picus viridis* and is consequently partial to park land and open country.

2. **The Southern Yellow-naped Woodpecker**, *Picus chlorolaphus chlorigaster* Jerdon is very widely spread throughout the forested regions of South India and wanders up to 5,000 ft. but is not common above about 3,500 ft. Rather a shy, solitary species it is only to be found in heavily wooded country being particularly fond of dark, marshy ravines clad in evergreen forest or the borders of jungle streams, where it hunts over rotting fallen trees. The nest is excavated usually quite low down in a rotten stump in heavy jungle. The entrance is a neat round hole seemingly very small for the bird and on two occasions I have found them made just below where a large flat fungus jutted out from the tree like a half plate and almost concealed the nest. After the breeding season small family parties are to be seen but they do not hang together for long. They are silent birds, their only note being an occasional loud sharp 'tehak'.

3. **The Southern Yellow-fronted Woodpecker**, *Leiopicus mahrattensis mahrattensis* (Lath.) is a low country species which seldom ventures far into the hills and only into the drier areas such as the northern slopes of the Nilgiris round Masinagudi where the jungle is of a light dry zone type mostly teak, scrub and bamboo.

4. **The Southern Indian Pigmy Woodpecker**, *Yungipicus hardwickii hardwickii* (Jerdon) is widely spread and much commoner than one suspects as owing to its size and habits it is very inconspicuous. Entirely arboreal it keeps to the topmost branches of high trees where it is extremely active in running over the boughs and is constantly on the wing as it flits from one twig to another. Pairs and single birds are the rule though they very frequently go about in company with the large mixed flocks of insectivorous birds which are such a feature of the monsoon. They are more like Nuthatches in their ways than Woodpeckers though they cannot run head downwards as the former do. In their flight too, they lack the bounding action so characteristic of the family. Parklands and open woodlands are their favourite haunts and they will ascend as high as 4,500 ft. in suitable country though commoner at lower elevations. Like all our Woodpeckers they are very early breeders, having young by the end of February. The nest-hole is usually excavated very high up in a small dead bough of a tree standing more or less in the open. This is the only Woodpecker which I have seen with food in its bill when visiting the nest, the usual habit being to regurgitate from the crop. In this case, the male used to fly up with a beakful of insects uttering his little trilling call, on hearing which the female who was in the nest would poke her head out to receive the prey.

5. **The Southern Rufous Woodpecker**, *Micropternus brachyurus gularis* (Jerdon) is a rather scarce species but well distributed in forest country up to about 4,000 ft. They are silent and solitary birds. Their food seems to consist almost exclusively of ants both terrestrial and arboreal. Their breeding habits are remarkable for the breeding cavity is always excavated in a nest of the arboreal *Cremastogaster* ants, which build those black football-shaped papier-mâché-looking affairs so common in the jungle trees. I have never had the luck to find one but many observers state that the Woodpeckers choose occupied colonies and that the ants remain in possession throughout the period of incubation though doubtless they are mostly devoured by the birds before very long. Davison remarks that he has found small naked young of this species in a nest still swarming with ants which is extraordinary when one considers that these insects are among the greatest menaces to which the helpless nestlings of most birds are subject.

6. **The Southern Golden-backed Woodpecker**, *Brachypternus benghalensis puncticollis* (Malherbe) is quite the commonest Woodpecker below 4,000 ft., occurring numerously almost everywhere trees are to be found. Above that level its place is taken by Malherbe's Golden-backed Woodpecker (*q. v. infra*) which is definitely a hill species. In the Nilgiris it does not seem to wander much above the plains level but in Coorg at any rate it is extremely common at 3,500 ft. and there is a zone in which both species occur. On the whole *B. benghalensis* prefers the drier and lower regions and *Chrysocolaptes guttacristatus* the higher and wetter. The Golden-backed Woodpecker is a very noisy bird and decidedly sociable. The family parties hang together until the following breeding season and in the monsoon they are always to be found

in the large mixed flocks which gather at that time of year. They are mainly arboreal in their habits but come to the ground on occasion. Their staple food is ants of various sorts but they will take any insects they find. On one or two occasions an odd fruit or two has been taken from the stomachs of specimens but this was probably accidentally swallowed. I have on two occasions seen one drinking honey, once from the blossoms of an *Acrocarpus* and once from a *Grevillea*. The bird looked most out of place clambering awkwardly among the sprays. They are mainly arboreal but come to the ground occasionally. Like all our Woodpeckers, this species is an early breeder and the two or three eggs are usually laid by the end of February. The nest-hole with its neat round entrance is excavated in dead trees at any height but most commonly from 10-20 ft. up. The sitting bird is very wary poking her head out at the first sound of approaching footsteps though she will often delay taking flight until one is quite near, thus betraying the presence of an otherwise unsuspected nest.

7. **The Golden-backed Three-toed Woodpecker, *Dinopicus javanensis rubropygialis*** (Malherbe) is another common species inhabiting much the same range as the last. Superficially the three Golden-backed Woodpeckers are extraordinarily similar. In the hand, of course, they can be distinguished without difficulty but in the field this is by no means the case. Size is little criterion unless one has a standard of comparison and the easiest points to look for are the colours of the hindneck, which is white in *C. guttacristatus* and black in the other two species, and the rump and lower back which in the case of *B. benghalensis* is black but crimson in the other two. In general habits the present species closely resembles the last but its call is quite distinct being a rather weak, tinny scream. The breeding season is in January and February and it seems to choose extremely rotten trees in which to excavate its nest. I have found one or two dug in such decayed wood that it was possible to enlarge the hole with no tools other than the fingers.

8. **Malherbe's Golden-backed Woodpecker, *Chrysocolaptes guttacristatus delesserti*** (Malherbe) as before mentioned is a hill species and the only Woodpecker at all common on the plateau and higher slopes of the Nilgiris. In Coorg it is found from the tops of the highest hills at 5,000 ft. and more, down to below 3,000 ft. It is more of a forest bird than *Brachypternus benghalensis* and while by no means shy or averse to the neighbourhood of mankind, it is very much at home in the interior of the heavy evergreen woods which clothe the hillsides in the wetter areas where it hunts among the great tree trunks, seldom coming near the ground. Except in the breeding season small family parties are the rule but they are select and do not mingle with other species. They are excessively noisy especially when alarmed their cry being a discordant trilling scream. The breeding season seems to be very early even for this family. I have found eggs by the middle of December. A favourite tree will be used year after year, a fresh hole being excavated each time until the trunk is so riddled with borings that it collapses. A distinctive characteristic of the species

is that the entrance to the hole which is very large for the size of the bird is practically never neatly circular as in the case of most Woodpeckers, but is a rather irregular oval deeper than it is wide. In one case I found it took a full month to excavate the cavity.

9. **The Black-Backed Woodpecker**, *Chrysocolaptes festivus* (Bodd.) is rare in South India and there are but few records of its occurrence. Hume obtained specimens and Howard Campbell a nest at the northern foot of the Nilgiris.

10. **The Malabar Heart-spotted Woodpecker**, *Hemicircus canente cordatus* Jerdon though nowhere numerous is to be found over most of the wooded hilly country of South India, wandering as high as 4,500 ft. on the Nilgiris. They are most comic little birds having all the family mannerisms exaggerated to an absurd degree. Their flight is weak and excessively undulating. The tail is extremely short and this is very apparent when on the wing and gives them the appearance of having met with an accident. When running up a bough, they move in short, sharp jerks accompanied by convulsive bobs and bows so that they look more like clock-work toys than living creatures. They are solitary birds and great wanderers seldom remaining long in any one locality. They rather shun cultivated land but otherwise their tastes are catholic and they may be found anywhere there is a good growth of timber. They are entirely arboreal and hunt very largely among the thin terminal twigs where they as often perch across a branch, albeit somewhat awkwardly, as in the normal Picine manner. The call is a very characteristic and rather pleasant 'twee, twee, twee' which is sometimes extended into a trill of seven or eight notes. There seems to be little known of the breeding habits of this bird. I have not so far been fortunate enough to find a nest but both in the Nilgiris and in Coorg the birds are paired in January and February and it is probable that they breed then in common with most of the members of the family.

11. **The Malabar Great Black Woodpecker**, *Thiroponax javanensis hodgsonii* (Jerdon) is typically a bird of the heaviest evergreen forests of the Western Ghats where it occurs fairly commonly up to 4,000 ft. In Coorg I have seen it in the drier and more open teak and bamboo jungle of the Mysore border but it is only a wanderer there. Shy and wary, they keep to the interior of the forests and only occasionally venture into cultivation on the jungle edge. Such large birds need a wide range so that the numbers in any one locality are never great. They seem to work a considerable area with some regularity for a family of three or four used to appear in the neighbourhood of my bungalow in the Nilgiris for a few days every six weeks or so for months on end. They would be seen for a couple of days and then disappear until their next visit fell due. Except in the breeding season small parties keep together. They are very noisy and the single, wild clanging note is audible at a great distance. As they take wing this call is often expanded into a ringing laugh. They seem to be exclusively arboreal and frequent the largest and tallest trees, hunting over the trunks and main boughs seldom venturing out among the smaller branches.

12. **The Nilgiri Piculet**, *Picumnus innominatus avunculorum* Hartert is a rare species only reported from Travancore, Wynaad and the Nilgiris. I have only seen it on two occasions, both on the Nilgiri slopes at about 4,500 feet among scrubby trees on the border of open grassland. In habits they were more like Nuthatches than Woodpeckers being very active in running up and down among the thin outer branches, frequently perching across them and taking wing to pass from one to another. They were silent little birds very much preoccupied in their affairs and very tame or rather quite indifferent to the presence of man. Their flight was strong and direct with but little of the usual Woodpecker bounds.

It seems probable that the original Woodpecker stock came from small birds with normal tails and comparatively small though powerful bills which obtained their food much as the Nuthatch does by searching the branches of trees for the small insects concealed in the bark and which bred in natural holes, but gradually learned to enlarge and adapt them for their purposes. The Piculets even at the present time, have hardly advanced beyond this stage as their tail feathers are still soft and weak and the bill fairly short and conical. While they do on occasion excavate a complete hole, they nearly always breed in bamboos which only entails making an entrance into the ready-made hollow interior. Once started on this line of advance, specialisation proceeded apace; the tail feathers stiffened to act as a support and a fulcrum, the bill became flattened and lengthened until it formed a most efficient chisel while the tongue grew long and sticky to aid in the withdrawal of grubs from their galleries in the tree trunks. Size also increased until the typical Woodpeckers reached their acme in species such as the Great Black Woodpecker and the Slaty Woodpecker of Burma and Assam. It would seem that the latter represent about the size limit for birds of their particular habits, as these giants of the race are seldom numerous, and require a very large territory to provide them with a sufficiency of food, besides being necessarily restricted to the densest and biggest forest country.

With increasing size the typical Woodpeckers become more and more dependent on wood-boring grubs as food though ants are always a great stand-by with all the members of the family. The larger species are prevented by their size from working the smaller leafy branches and outermost twigs, the regions richest in insect-life, while ants and such small fry unless available in great quantity do not make nearly so satisfying a meal as a few large juicy grubs. Accordingly, it is in the largest forms that the greatest development of the bill is found. In the smallest birds, like *Yungipicus hardwickii* and *Hemicircus canente*, the bill is sharply pointed and fairly short. In the medium genera such as *Leiopticus* and *Dinopicus* it is still pointed but comparatively much longer and stronger. In the largest of all such as *Thriponax* and *Chrysocolaptes* it terminates in a flat chisel edge, a much more efficient tool than a mere point.

While the majority of our Woodpeckers conform to type in

their habits there are at least two genera which show a well-marked divergence from the main path. The Green Woodpeckers, for instance, as typified by *Picus vittatus* are apparently gradually turning into ground feeders. Whilst still true Woodpeckers in all respects they obtain a great deal of their food by preying on terrestrial ants' nests and have left the heavier forests for lighter and more open woodlands, venturing right out into treeless country in search of their favourite rations. In our local species this trait is only in its early stages but it is carried much further in other countries such as the Argentine where trees are scarce.

The Rufous Woodpecker has followed a different line of development to the extent of becoming almost a parasite on the arboreal *Cremastogaster* ants. It is not a very common species but as far as my personal observation goes, it lives almost entirely on these ants, seldom, if ever boring for grubs though it occasionally comes to the ground and has been seen by Legge breaking up dried cowdung in search of the maggots and beetles below. The sticky acrid substance which is nearly always found smeared over the head and breast of birds of this species is said to be derived from the ants' nests into which it burrows, but there seems a possibility that it might be a secretion of the bird itself, developed as a defence against the enraged insects whose homes it attacks and uses for breeding purposes.

Before closing this paper I must allude to the curious habit of drumming indulged in by many if not all Woodpeckers. There has been a lot of discussion lately in the *Field* and other papers as to whether this sound is produced purely mechanically or whether it may be vocal. I have watched birds in the act at close quarters on several occasions and as far as I could detect the former is the correct view. A particular and presumably specially resonant dead branch is chosen and the bird proceeds to tap it with the bill lightly and so rapidly that the movements of the head are barely visible giving an effect much like the roll of a drum. After every few seconds the bird pauses and looks round expectantly as though awaiting an answer or the arrival of its mate. The same branch is resorted to time after time and will be found to be almost unmarked, the whole action being very different from the slow, heavy strokes employed when a nest is being excavated or grubs dug out. While apparently a mating call in its origin, drumming may be heard throughout the year. The species which I have seen in the act are *Chrysocolaptes gutta-cristatus*, *Brachypternus benghalensis*, *Micropternus brachurus* and *Yungipicus hardwickii*.